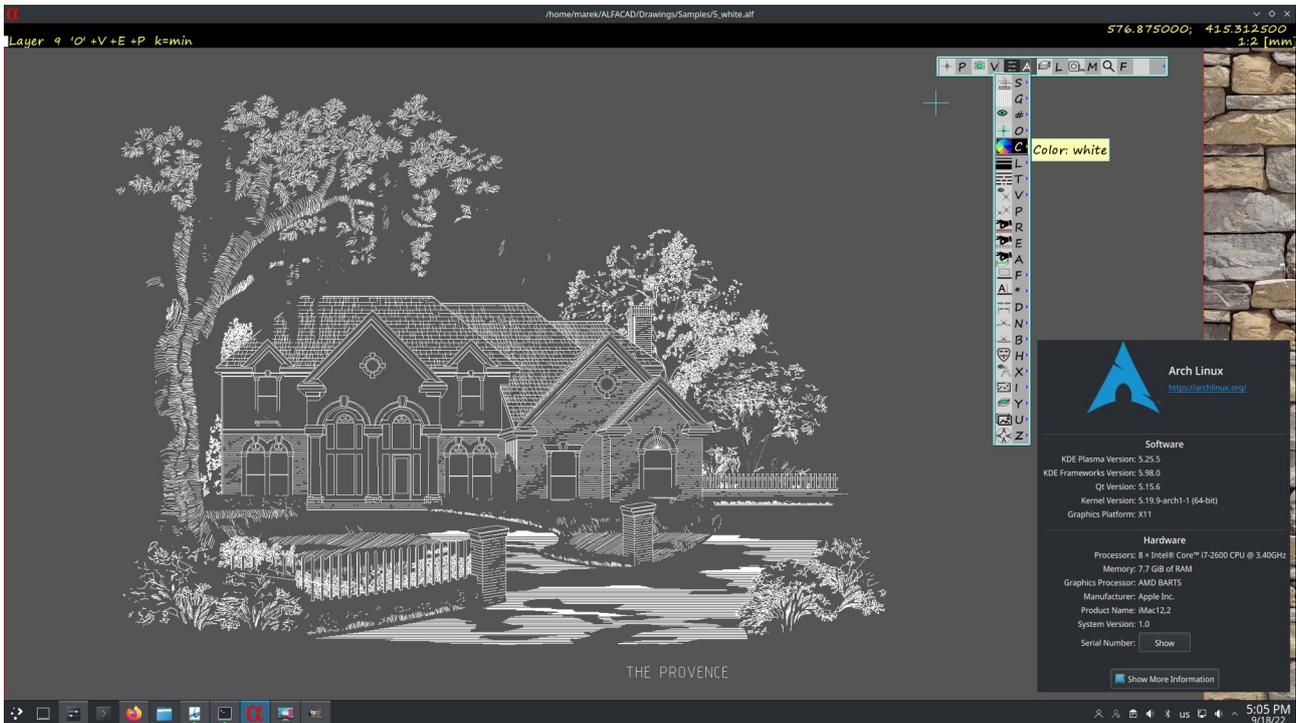


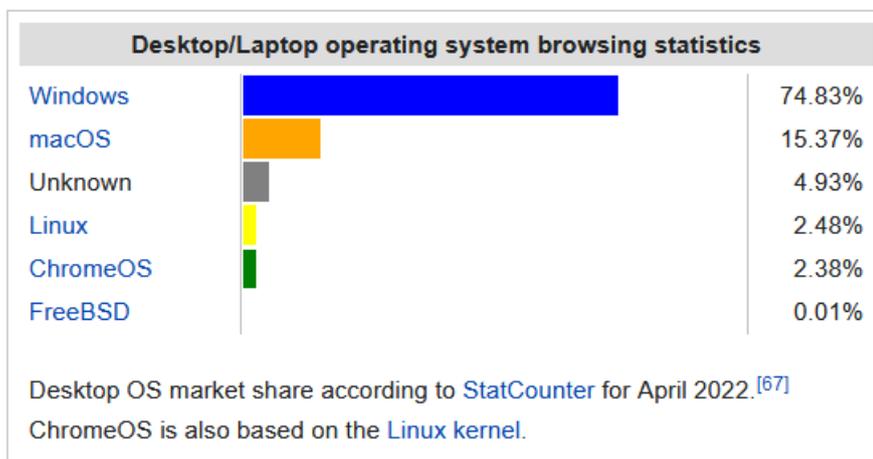
# AlfaCAD for Linux

After not fully successful try of running AlfaCAD under Linux in WINE environment, three months ago I decided to create Linux native version of AlfaCAD, with no compromises. Today is a day of glory. AlfaCAD for Linux is published on <https://alfacad.net/> webpage. Complete, working, however still in young stage (“going silver”), so potentially to be improved in next iterations, including bug fixing and all those things associated with the care of new born baby.



## The story

Windows is still the dominant desktop OS, but the dominance varies by region and it has gradually lost market share to other desktop operating systems (not just to mobile) with the slide very noticeable in the US, where macOS usage has more than quadrupled from Jan. 2009 to Dec. 2020 to 30.62%, with Windows down to 61.136% and ChromeOS at 5.46%, plus traditional Linux at 1.73%. Another source of market share of various operating systems is StatCounter basing its estimate on web use (although this may not be very accurate). The image below shows the share based on browsing statistics.



The 2019 Stack Overflow developer survey provides no detail about particular versions of Windows. The desktop operating system share among those identifying as **professional developers**

Windows: 45.3%  
macOS: 29.2%  
Linux: 25.3%  
BSD/Unix: 0.1%

So, not counting professional developers, does it make any sense to spend time and put much effort to deliver native Linux applications to the users ?

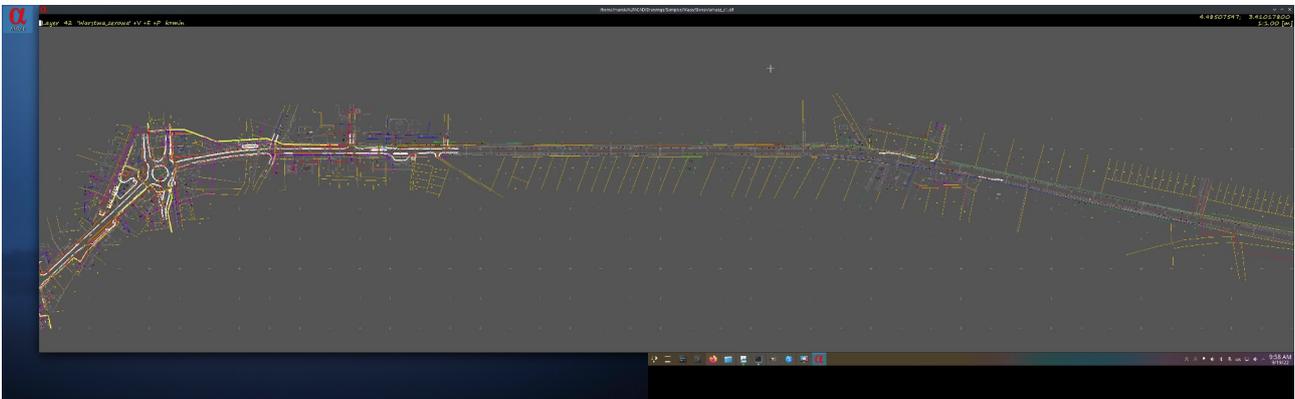
I'm not sure about that, but after my latest experience with Linux programming, as well as latest experience with using modern Linux desktop system, I'm drifting to such conclusions it's worth some effort to adopt Linux platform to everyday tasks, what is already proven by ChromeOS (also based on Linux) and extend for professional use, including designing, in particular CADs.

The Linux version of AlfaCAD imposed many changes in the program, mainly due to the lack of such support as GDI in Windows (Graphics Device Interface) as a legacy component of Microsoft Windows responsible for representing graphical objects and transmitting them to output devices such as monitors and printers, being used by AlfaCAD. Is "legacy", not cutting edge technology, but well done and very useful.

Simple programs, including games that do not require fast graphics rendering may use GDI. However, GDI is relatively hard to use for advanced animation, lacks a notion for synchronizing with individual video frames in the video card, and lacks hardware rasterization for 3D. Modern games usually use DirectX, Vulkan, or OpenGL instead. Starting from Windows 7 GDI is included in hardware acceleration for blitting operations, thereby reducing system memory footprint and increasing the performance of graphics.

In Linux version AlfaCAD is using very standard Xlib (also known as libX11), an X Window System protocol client library written in the C programming language. It contains functions for interacting with an X server. These functions allow programmers to write programs without knowing the details of the X protocol, however, X11 by itself was not designed with any hardware acceleration in mind. Therefore, many things in AlfaCAD had to be changed. It was not wasting time and effort. All those changes will be implemented also in Windows next iteration of the program, with big benefits for speed and simplicity of graphic operations.

The program supports multi-monitor architecture.



Program was re-designed, compiled, completed and heavily tested on Archlinux 5.19.9 with Plasma 5 graphical workspaces environment created by [KDE](#), using iMac i7 2011.

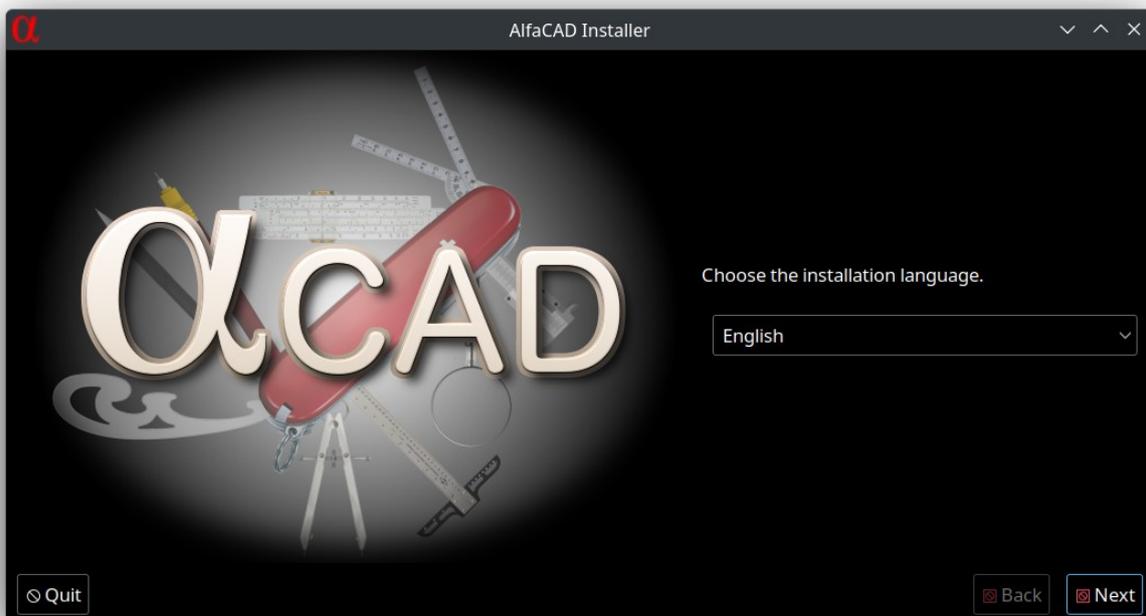
AlfaCAD for Linux is 64bit application.

## Program installation

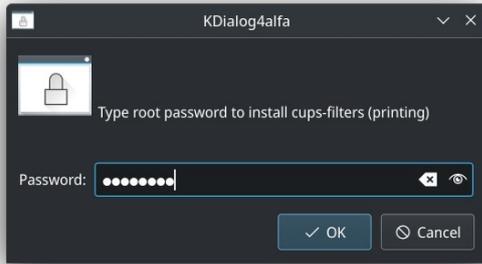
Before installing the program, complete the libraries necessary for the program to work, in particular to enable such functions as opening dialog boxes for selecting drawing files, editing multi-line texts (text blocks), saving drawings in various graphic formats, and finally printing drawings on printers and raster plotters. AlfaCAD includes all the necessary programs to perform these functions, but some of them require libraries not necessarily installed by default on every Linux distribution. A detailed description of such preparation will be available soon on the program's home page, including some of the most popular distributions, such as Arch, Fedora, Red Hat, Debian, Ubuntu, Manjaro etc. In any case, with or without the preparation of the system for installation, the program can be installed, in the worst case, while running the program from the console, a message about the lack of some library will be displayed. Due to the fact that the interpretation of such a message may be difficult for someone, often due to the rather enigmatic name, the above-mentioned instruction on how to prepare the system for program installation is to come with help. If the distribution is fairly complete, such as Arch Linux, only individual libraries will be missing. For some distributions, the task will be a bit more complex.

Download AlfaCAD\_Setup file from webpage <https://alfacad.net/get-alfacad-2/>  
Change permission to execute the file and run it.

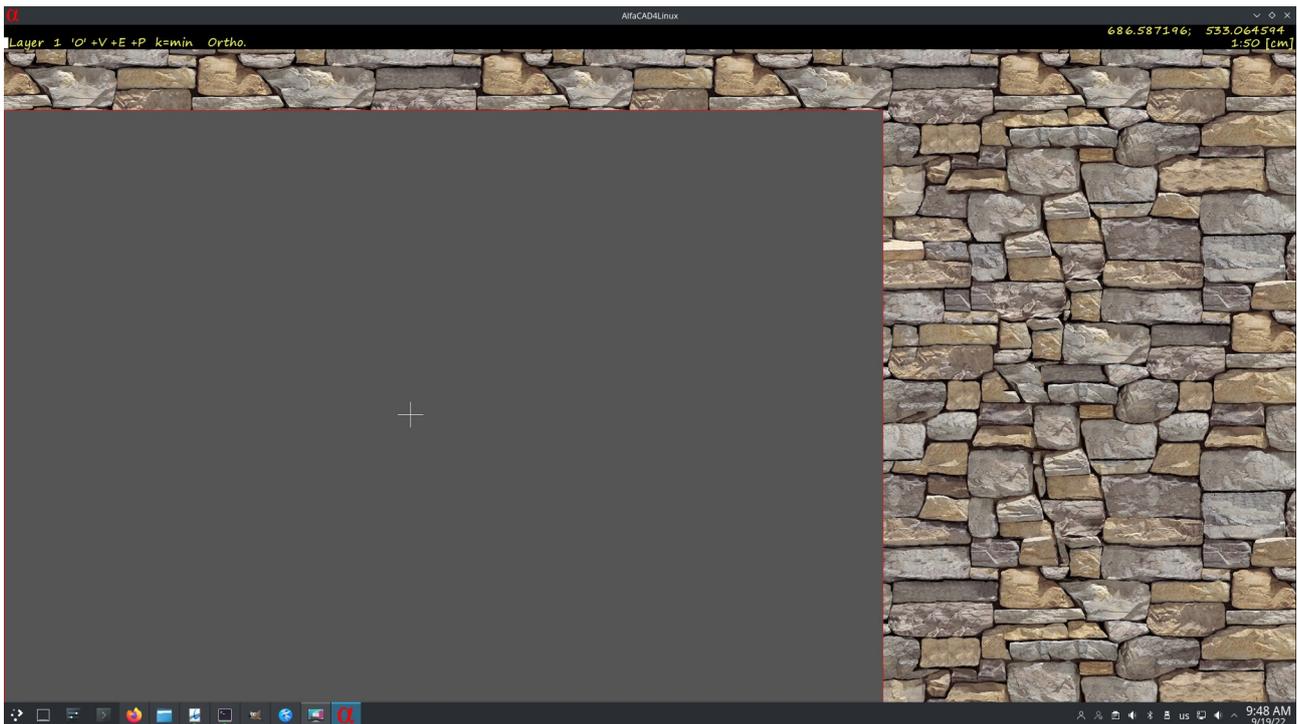
The program installation itself does not differ much from the program installation in Windows or Mac OS X, because it is based on the installation program, although this program in its current form does not automate the installation of all dependent libraries, although such an improvement is the author's intention for subsequent iterations of the program.



The following windows guide you step by step through the installation process, including asking for root's password in order to install CUPS filters for the correct printing of drawings:



When the core libraries are complete and the installation is successful, AlfaCAD for Linux can be proudly launched (sorry for Chuck Norris' quote, it was accidental)



I will provide more information soon. Work on the version for Linux and, in parallel, work on a newer version for Windows, based on the experience with Linux, are underway, and the result of this work will be published on the website soon.

Enjoy AlfaCAD,

author